APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,894	11/24/2003	Deepak M. Srinivasa	JP920020187US1	5307

39903   7590   11/21/2007
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EXAMINER
LIU, LIN

ART UNIT	PAPER NUMBER
2145	

MAIL DATE	DELIVERY MODE
11/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/720,894	SRINIVASA, DEEPAK M.	
	Examiner	Art Unit	
	Lin Liu	2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
> Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 September 2007</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-14</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/10/2007</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____

DETAILED ACTION

1.   This office action is responsive to communications filed on 09/09/2007.

Claims 1-14 are pending and have been examined.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and
> process of making and using it, in such full, clear, concise, and exact terms as to enable any
> person skilled in the art to which it pertains, or with which it is most nearly connected, to make
> and use the same and shall set forth the best mode contemplated by the inventor of carrying
> out his invention.

3.   Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the

time the application was filed, had possession of the claimed invention. Applicant

has amended the independent claims to include the limitation: *"presenting a*

report of the complexity measures associated with performing the task", which is

not explicitly disclosed in the specification. Examiner has reviewed the

BACKGROUND section of the published application paragraphs 0006 and 0007

as applicant pointed in the remark, but no explicit disclosure of the "presenting a

report of *the complexity measures"* is found from these passages. The disclosure

of the published application paragraphs 0006 and 0007 is directed toward

preparing and presenting a report for the subactions carried out by the software

agents, which shows no explicit disclosure of *"the complexity measures"*.

Claim Rejections - 35 USC § 103

4.   **Claims 1-5, 6, 9, 10-14** are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Reiffin (Patent no.: US 6,330,583 B1)** in view of applicant

Admitted Prior Art. Admission [See MPEP § 704.11 (a), section (s), paragraph

4].

With respect to **Claim 1,** Reiffin teaches a method in a computer system

for assessing the relative complexity of different options for performing a task by

the computer system, the method comprising the steps of:

storing programming instructions on a storage medium of the computer

system (Reiffin: fig. 2, col. 4, lines 1-33, CPU):

executing the instructions by the computer system, wherein the executing

causes the computer system to implement a method comprising the steps of

(Reiffin: fig. 2, col. 4, lines 1-33, CPU):

defining the task as a sequenced set data structure that specifies actions

of the task (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted

that a large compute-intensive task is partitioned into a plurality of smaller

subtasks), and sequence information that specifies the order in which particular

actions are to be performed (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col.

5, line 8, noted that these subtasks are stored in the form of a queue, which

implies that the subtasks would be performed in the order that's being fetched

out of queue);

storing recipes available for performing constituent actions of the task as

sequenced set data structures that specify subactions of the recipes for the

constituent actions (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that a large compute-intensive task is partitioned into a plurality of smaller subtasks and stored a queue), and sequence information that specifies the order in which the subactions are to be performed (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that the task is partitioned into portion of data and program code and stored in a network directory of a disk drive in the form of a queue); and

determining complexity measures associated with performing the task using different combinations of recipes for constituent actions of the task, based upon complexity measures of actions specified by respective combinations of available recipes (Reiffin, col. 2 lines 26-33, and col. 5, lines 3-8, noted that the a computer node or agent searches for an available subtask waiting in the queue and copies of the subtask program and data to the node to be executed concurrently with the local task in the foreground and background).

However, Reiffin does not explicitly teach a method of presenting a report of the complexity measures associated with performing the task.

In the same field of endeavor, the Admission discloses a method of generating and presenting a report of the complexity measures associated with performing the task (Admission: page 1, paragraphs 0006-0007).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of presenting a performance report as disclosed by the Admission in Reiffin's invention in order to automatically identify issues that can indicate the possible future failure of

computers in the network by generating reports of the type that can control the

operations of other computers which can download the patch to repair the issues.

Rejections to other claims can be found from the previous Office Action or

the 103 rejections below.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

6.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1,

148 USPQ 459 (1966), that are applied for establishing a background for

determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at
        issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

7.   Claims **1-5, 6, 9, 10-14** are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Reiffin (Patent no.: US 6,330,583 B1)** in view of **Holland et**

al. (PGPUB: US 2003/0154177 A1).

With respect to **Claim 1**, Reiffin teaches a method in a computer system

for assessing the relative complexity of different options for performing a task by

the computer system, the method comprising the steps of:

storing programming instructions on a storage medium of the computer system (Reiffin: fig. 2, col. 4, lines 1-33, CPU):

executing the instructions by the computer system, wherein the executing causes the computer system to implement a method comprising the steps of (Reiffin: fig. 2, col. 4, lines 1-33, CPU):

defining the task as a sequenced set data structure that specifies actions of the task (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that a large compute-intensive task is partitioned into a plurality of smaller subtasks), and sequence information that specifies the order in which particular actions are to be performed (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that these subtasks are stored in the form of a queue, which implies that the subtasks would be performed in the order that's being fetched out of queue);

storing recipes available for performing constituent actions of the task as sequenced set data structures that specify subactions of the recipes for the constituent actions (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that a large compute-intensive task is partitioned into a plurality of smaller subtasks and stored a queue), and sequence information that specifies the order in which the subactions are to be performed (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that the task is partitioned into portion of data and program code and stored in a network directory of a disk drive in the form of a queue); and

determining complexity measures associated with performing the task using different combinations of recipes for constituent actions of the task, based upon complexity measures of actions specified by respective combinations of available recipes (Reiffin, col. 2 lines 26-33, and col. 5, lines 3-8, noted that the a computer node or agent searches for an available subtask waiting in the queue and copies of the subtask program and data to the node to be executed concurrently with the local task in the foreground and background).

However, Reiffin does not explicitly teach a method of presenting a report of the complexity measures associated with performing the task.

In the same field of endeavor, Holland teaches a method of generating and presenting a report of the complexity measures associated with performing the task (Holland: fig. 1-2 & 8, page 2, paragraphs 17-19, and page 4, paragraphs 77-78).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of generating and presenting a performance report as taught by Holland in Reiffin's invention in order to automatically identify issues that can indicate the possible future failure of computers in the network by generating reports of the type that can control the operations of other computers which can download the patch to repair the issues (Holland: page 4, paragraph 78).

With respect to **claim 2,** Reiffin teaches the method as claimed in claim 1, wherein complexity measures for actions are defined in terms of the complexity measures of available recipes for performing the actions, and complexity

measures for recipes are defined in terms of the complexity of the subactions of the recipe (Reiffin, col. 2 lines 19-33, and col. 4, line 64 to col. 5, line 8, noted that a large compute-intensive task is partitioned into a plurality of smaller subtasks and stored a queue).

With respect to **claim 3,** Reiffin teaches the method as claimed in claim 1, further comprising the steps of:

determining predetermined complexity measures for basic actions that are not specified by a recipe (Reiffin, col. 5, lines 23-39, determination of whether a local task needs to be executed during the next clock tick); and

determining specified complexity measures for contracted actions that are performed by a different agent (Reiffin, col. 5, lines 55-62, noted the node or agent determines as to whether there is a network subtask needs to be performed in the next timeslice).

With respect to **claim 4,** Reiffin teaches the method as claimed in claim 1, further comprising the alternating steps of:

updating complexity measures for recipes in relation to actions whose complexity measures are determined (Reiffin, col. 4, lines 33-40, noted that at each timeslice the counter is reset so that the operation is iterated over again); and

updating complexity measures for actions in relation to recipes whose complexity measures are updated (Reiffin, col. 4, lines 48-67, noted that at each series of timeslice, workstation checks whether a remote subtask is available to be executed concurrently with the local task).

With respect to **claim 5,** Reiffin teaches the method as claimed in claim 1,
wherein the complexity measures associated with a particular action (Reiffin, col.
3, lines 11-15, concurrent processing of local tasks and remote subtask)
performed by a particular agent (Reiffin, col. 3, lines 16-20, the workstation that is
performing the concurrent processes) is based upon the complexity measures for
each of the recipes for that action (Reiffin, col. 5, lines 55-62, determination as to
whether there is a remote subtask needs to be performed by the workstation).

With respect to **claim 6,** Reiffin teaches method as claimed in claim 1,
wherein the sequence information that specifies the order in which particular
actions are to be performed specifies, for pairs of actions (Reiffin, col. 3, lines 16-
20, concurrent processing of local tasks and network subtask), that one specified
action is sequenced before another specified action (Reiffin, col. 3, lines 1-11,
noted that the local task is executed in one timeslice and the remote task is
executed during the next timeslice.).

With respect to **claim 9,** Reiffin teaches method as claimed in claim 1,
further comprising the step of delegating the defined task (Reiffin, col. 4, line 19-
32, a large compute-intensive task) to a primary agent for execution of the task
by at least one of the primary agent (Reiffin, col. 4, line 28-32, the network
workstation) and one or more contracting agents (Reiffin, col. 4, line 19-28, the
subtasks are distributed to other computers of the network).

With respect to **claim 10,** Reiffin teaches the method as claimed in claim
1, wherein a plurality of series of actions exist for performing the defined task,
each of the series of actions having a corresponding complexity, and the method

further comprises the step of: performing the defined task (Reiffin, col. 4, lines 19-32, a large compute-intensive task) by executing a selected one of the series of actions, wherein the complexity of the selected series of tasks is less than the complexities of the other series of tasks of the plurality of series of tasks (Reiffin, col. 2, lines 60-67, the complex operation is minimum when there is no remote subtask available, where the workstation only executes the local task).

Claim 11 lists all the same elements of claim 1, but in a computer software form rather than method form. Therefore, the supporting rationale of the rejection to claim 1 applies equally as well to claim 11.

Claim 12 lists all the same elements of claim 1, but in a computer software code form rather than method form. Therefore, the supporting rationale of the rejection to claim 1 applies equally as well to claim 12.

Claim 13 lists all the same elements of claim 1, but in a computer system form rather than method form. Therefore, the supporting rationale of the rejection to claim 1 applies equally as well to claim 13.

Claim 14 lists all the same elements of claim 1, but in a computer system form rather than method form. Therefore, the supporting rationale of the rejection to claim 1 applies equally as well to claim 14.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1,

148 USPQ 459 (1966), that are applied for establishing a background for

determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

10.   Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Reiffin (Patent no.: US 6,330,583 B1)** in view of **Holland et al. (PGPUB:**

US 2003/0154177 A1) and further in view of **Kamps (Patent no.: US 6,915,212**

B2).

With respect to **claim 7,** the combined method of Reiffin and Holland

teaches all the claimed limitation with the exception that they do not explicitly

teach a method of defining a sequenced set data structure as S=(A, M), in which

A is a multi-set element and M is a sequencing relation that specifies an ordered

sequence of the elements A in the sequenced set S.

In the same field of endeavor, Kamps teaches a method of defining a

sequenced set data structure (Kamps, fig. 6 and col. 7, lines 5-28) as S=(A, M),

in which A is a multi-set element (Kamps, fig. 6, nodes 1 to N, 440a to 440d) and

M is a sequencing relation that specifies an ordered sequence of the elements A

in the sequenced set S (Kamps, fig. 6, nodes 440a-440d, noted that it is numbered in sequence of node 1 to node N).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of defining a sequenced set data structure as taught by Kamps in the combined method of Reiffin's and Holland's invention in order to distribute the data transfer across the network and reduce the burden on a master node (Kamp, col. 7, lines 23-26).

With respect to **claim 8,** the combined method of Reiffin and Holland teaches all the claimed limitation with the exception that they do not explicitly teach a method of defining a sequencing relation for the sequenced set data structure S for two elements a_i and a_j of multi-set element A, such that a_i is sequenced before a_j in set A under the relation M.

In the same field of endeavor, Kamps teaches a method of defining a sequencing relation for the sequenced set data structure (Kamps, fig. 6 and col. 7, lines 5-28) S for two elements a_i and a_j of multi-set element A (Kamps, fig. 6, node 1 440a, and node 2 440b), such that a_i (Kamps, fig. 6, node 1 440a) is sequenced before a_j (Kamps, fig. 6, node 2 440b) in set A under the relation M (Kamps, fig. 6, and col. 7, lines 11-12, noted that node 1 440a is sequenced before node 2 440b, and data is first served to node 1 then to node 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of defining a sequenced set data structure as taught by Kamps in the combined method of Reiffin's and

Holland's invention in order to distribute the data transfer across the network and

reduce the burden on a master node (Kamp, col. 7, lines 23-26).

Response to Arguments

11.   Applicant's arguments with respect to claims 1-14 have been considered

but are moot in view of the new ground(s) of rejection.

12.   Applicant's arguments filed on 09/09/2007 have been fully considered but

they are not persuasive.

13.   Applicant's reply to the Office Action mainly focused on the teaching of the

"complexity measures". First, examiner would like point out that the "complexity

measures" is a very broad and abstract term, which is not explicitly defined in the

present claim. The present claim does not specify how complex and to what

degree or amount of the complexity measurements of the combinations of

subtask has to be. Therefore, the term "complexity measures" is given with the

broadest interpretation of the claim language in light of the specification.

Applicant is advised to amend the claim language by explicitly clarifying the term

"complexity measures".

14.   In response to applicant's argument that "Reiffin makes no mention or

suggestion of "complexity measure." Reiffin mentions merely that a task is

"compute-intensive." Even if a "compute-intensive" task is considered to be like a

complex task, what *measure* of that complexity does Reiffin teach? The Office

action cites none. The examiner disagrees. As stated above the term "complexity

measures" is not explicitly defined in the present claim. Therefore, the broadest

reasonable interpretation of the term "complexity measures" can be read as

"compute-intensive" task.

15.   In response to applicant's argument that "Further, what measures of task

complexity does Reiffin teach that are "determined based upon complexity

measures of actions specified by respective combinations of available recipes,"

as recited in claim 1?". The Office action cites none. The examiner disagrees. It

is determined based on the fact that such compute-intensive task is partitioned

into a plurality of smaller subtasks, which are then distributed to other computers

in the network to be executed simultaneously in parallel (Refiffin: col. 2, lines 19-

33).

16.   Response to applicant's argument directed toward claim 2 is the same as

above.

17.   In response to applicant's argument "The Office action contends that this

teaching anticipates "determining predetermined complexity measures for basic

actions that are not specified by a recipe," as recited in claim 3. How does

determining whether a local task needs to be executed during a next clock tick

anticipate "determining predetermined complexity measures for basic actions that

are not specified by a recipe," as recited in claim 3? One does not follow from the

other, and the Office action gives no reason why it should." The examiner

disagrees. Again, stated above the term "complexity measures" is not explicitly

defined in the present claim. Therefore, the broadest reasonable interpretation of

the "predetermined complexity measures" can be read as *local task* from Reiffin,

wherein the "predetermined complexity measures" level for such task is carried out locally (Reiffin: fig 4, col. 5, lines 23-39).

18.   In response to applicant's argument "Regarding claim 3, the Office action also observes that Reiffin, col. 5, lines 55-62, teaches that the node (acting as an agent for the computer with the compute-intensive task) determines whether there is a network subtask that needs to be performed in the next timeslice. The Office action contends that this teaching anticipates "determining specified complexity measures for contracted actions that are performed by a different agent," as recited in claim 3. Again, there is no teaching or suggestion by Reiffin that the node determines a complexity measure." The examiner disagrees. Again, stated above the term "complexity measures" is not explicitly defined in the present claim. Therefore, the broadest reasonable interpretation of the term "specified complexity measures" can be read as partitioned compute-intensive task from Reiffin, wherein the partitioned subtask are performed by other computers in the network (Reiffin: col. 2, lines 19-33, and col. 5, lines 52-62).

19.   Applicant has had an opportunity to amend the claimed subject matter, and has failed to modify the claim language to distinguish over the prior art of record by clarifying or substantially narrowing the claim language. Thus, Applicant apparently intends that a broad interpretation be given to the claims and the Examiner has adopted such in the present and previous Office action rejections. See In re Prater and Wei, 162 USPQ 541 (CCPA 1969), and MPEP 2111.

20.   Applicant employs broad language, which includes the use of word, and phrases, which have broad meanings in the art. In addition, Applicant has not argued any narrower interpretation of the claim language, nor amended the claims significantly enough to construe a narrower meaning to the limitations. As the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure, the Examiner is forced to interpret the claim limitations as broadly and as reasonably possible, in determining patentability of the disclosed invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993).

21.   Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response, and reiterates the need for the Applicant to more clearly and distinctly defines the claimed invention.

Conclusion

22.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Liu whose telephone number is (571) 270-1447. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

/L. L./

/Lin Liu/

Examiner, Art Unit 2145

/Jason D Cardone/

Supervisory Patent Examiner,

Art Unit 2145